ACTUARIAL REPORT

on the

GROUP INSURANCE FUND

for

EMPLOYEES

of

PARTICIPATING MUNICIPALITIES IN MANITOBA

at

JANUARY 1st, 1986

TURNBULL and TURNBULL

Manitoba

Minister of
Municipal Affairs

Winnipeg, Manitoba, CANADA
R3C 0V8

July 8, 1987

His Honour George Johnson
Lieutenant Governor of Manitoba
225 Legislative Building
Winnipeg, Manitoba
R3C 0V8

May It Please Your Honour:

As Minister responsible I have the privilege of presenting for the information of Your Honour the Third Triennial Actuarial Report on the Group Insurance Fund for Employees of Participating Municipalities in Manitoba as at January 1, 1986.

Respectfully submitted,

John M. Bucklaschuk

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July 2, 1987

Honourable John M. Bucklaschuk
Minister of Municipal Affairs
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Winnipeg, Manitoba
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Sir:

I have the honour of presenting to you the Third Triennial Actuarial Report on the Group Insurance Fund for Employees of Participating Municipalities in Manitoba. This report was prepared at January 1, 1986 by Turnbull and Turnbull, Consulting Actuaries.

The report indicates that the Insurance Fund had an actuarial deficit at January 1, 1986. This deficit is a cautious estimate of the financial position of the Insurance Fund at that date. The results were adversely affected by improvements made to other Parts of the Municipal Employees Benefits Program. These improvements permitted more employees to qualify for disability pensions and become entitled to a waiver of contributions under the Insurance Part of the Benefits Program.

The Actuary states that there should be no cause for concern at this time. The significance of the deficit is decreasing. The break-even premium rate has decreased and is expected to decrease further in the future. This will make it possible for the deficit to decrease over time.

Respectfully submitted,

G. D. Forrest
Chairman

Chairman and Members of the
Municipal Employees Benefits Board,
Winnipeg, Manitoba.

1. Purpose

The Municipal Act was amended by legislation in 1975. The amendment required each municipality to establish a pension plan for certain of their employees. The amendment permitted such a plan to provide insurance protection.

In 1976, Regulations were approved which created the Municipal Employee Benefits Program (Program) and gave the Municipal Employees Benefits Board (Board) responsibility for administering the Program. The Regulations also required a periodic actuarial report on the financial position of the Group Insurance Fund (Insurance Fund) part of the Municipal Employees Benefits Fund. Reports are required to be prepared at least once every 3 years. The last report was prepared at January 1st, 1983 (1983 Report).

This Report has been prepared at January 1st, 1986.

The purpose of this report is to:

(a) indicate the financial position of the Insurance Fund.

(b) evaluate the sufficiency of the contribution rates currently being paid by employees and participating employers, and

(c) indicate the apparent break-even premium rates for the Insurance Plan and, where appropriate, for each type of insurance protection, based on the present and possible future distributions of insurance by age and sex.

In this Report, all references to Insurance Plan mean the Group Insurance Plan for Employees of Participating Municipalities in Manitoba. References to the Pension Plan mean the Pension Plan for Employees of Participating Municipalities in Manitoba.

2. Sources of Information

The information on which the valuation is based included:

(a) A diskette which provided information for each employee who was a member of the Insurance Plan at any time during the 3-year period ending January 1st, 1986 (valuation period). Details of the information included: social insurance number, section code, name, sex, date of birth, salary received in 1985, proportion of the year that each employee worked in 1985, multiple of salary code and insurance amount.

(b) A list which provided information for each employee at January 1st, 1986 who qualified for a waiver of contribution benefit as a result of total disability. This information included: name, municipality, sex, social insurance number, date of birth, effective date, amount of insurance, status code and date of reduction.

(c) A diskette which provided information for each retired employee who was insured under the Insurance Plan. The information provided included: name, social insurance number, municipality code, sex, date of birth, sex and date of birth of beneficiary, beneficiary relationship, type of retirement and insurance amount.

(d) Copies of the Auditor's Reports and Financial Statements for the Insurance Fund for the policy years ending December 31st, 1983, December 31st, 1984, and December 31st, 1985.

(e) A copy of Group Policy No. 59001-L issued by the Prudential Assurance Company Limited to the Board (Policy).

(f) A copy of the Municipal Act, as amended to date.

(g) Copies of financial statements prepared by The Prudential Assurance Company Limited. These statements provided financial information for the policy years ending December 31st, 1983, December 31st, 1984, and December 31st, 1985.

(h) A copy of the Actuarial Report on the financial position of the Pension Plan for Employees of Participating Municipalities in Manitoba at January 1st, 1986 (1986 Pension Report).

(i) A copy of the Actuarial Report on the financial position of the Insurance Plan for Employees of Participating Municipalities in Manitoba at January 1st, 1983 (1983 Insurance Report).

The data provided as at January 1st, 1986 was reviewed for missing information, illogical information, and was also compared to the data provided as at January 1st, 1983.

As a result of these procedures changes were made to approximately 100 records. There were records for 1,300 members participating in the Insurance Fund at January 1st, 1986.

The salaries received in 1985 were increased to obtain annual salary rates at January 1st, 1986. This increase was made by assuming that the increase in salaries during 1985 occurred in accordance with the assumptions made for future increases in salaries.

Some employees were participating in the Insurance Plan for only part of 1985. For these employees, the salary received was increased to reflect the salary that would have been received had the employee been a member of the Insurance Plan throughout 1985.

3. Membership of the Insurance Plan

The information indicated that the membership of the Insurance Plan was as follows:

	January 1st, 1986			January 1st, 1983		
Age Group	Males	Females	Total	Males	Females	Total
(a) Employees						
<20	1	1	2	3	1	4
20 - 24	36	30	66	58	43	101
25 - 29	124	56	180	115	48	163
30 - 34	161	43	204	139	29	168
35 - 39	151	44	195	125	36	161
40 - 44	125	40	165	116	44	160
45 - 49	134	39	173	132	19	151
50 - 54	145	28	173	139	23	162
55 - 59	127	16	143	122	17	139
60 - 64	93	12	105	91	18	109
≥65	22	2	24	18	1	19
	1,119	311	1,430	1,058	279	1,337
(b) Retired Employees						
<55	0	0	0	0	0	0
55 - 59	4	2	6	2	0	2
60 - 64	14	8	22	13	4	17
65 - 59	73	7	80	42	3	45
70 - 74	24	1	25	8	0	8
75 - 79	3	0	3	1	0	1
	118	18	136	66	7	73
(c) Disabled Employees						
	34	0	34	11	0	11
Total	1,271	329	1,600	1,135	286	1,421

The following table shows the amounts of group life insurance in force under the Insurance Plan:

	January 1st, 1986		
	Males	Females	Total
(a) Employees	$51,545,500	$10,077,000	$61,622,500
(b) Retired Employees	921,358	175,448	1,096,806
(c) Disabled Employees	1,495,364	0	1,495,364
Total	$53,962,222	$10,252,448	$64,214,670

	January 1st, 1983		
	Males	Females	Total
(a) Employees	$46,695,796	$ 8,195,806	$54,891,602
(b) Retired Employees	435,866	81,920	517,786
(c) Disabled Employees	348,887	-	348,887
Total	$47,480,549	$ 8,277,726	$55,758,275

4. Operation of the Plan

(a) Insurance Plan Summary

The Insurance Plan for employees and officers of participating municipalities and quasi-municipalities in Manitoba is administered in accordance with the Municipal Act and Regulations thereunder. Retired and disabled employees can be insured if they are members of the Pension Plan and if they were insured under the Insurance Plan as employees. This insurance protection is provided by The Prudential Assurance Company Limited (Prudential) under Group Policy No. 59001-L. Effective December 1st, 1984, administration of the Policy is handled by Constellation Assurance Company on behalf of Prudential. In our discussions, no further reference will be made to Constellation and we will speak only of Prudential in all matters.

Accidental death and dismemberment insurance protection is provided to employees participating in the Insurance Plan. Employees who are retired or disabled are not eligible for this benefit. This insurance protection is also provided under Group Policy No. 59001-L.

Each employee who is participating in the Insurance Plan is insured for 200% of annual earnings. At the employee's option, the life insurance protection can be reduced to 100% of the annual earnings. The amount of life insurance protection provided to employees who are employed on a part-time basis is based on the annual earnings in the previous calendar year.

A retired employee is insured for the following proportions of the pre-retirement amount of life insurance protection:

Attained Age	% of Pre-Retirement Insurance Protection
Less than 65	50%
65 to 69	25
70 and over	$1,000 (fixed amount)

A retired employee may elect to cease making contributions prior to age 70. If this option is chosen the amount of life insurance protection is reduced to $1,000.

Each employee insured under the Insurance Plan who becomes totally disabled continues to be insured for the amount of life insurance protection which was in effect on the date the employee became totally disabled. This life insurance protection continues in effect until the employee's normal retirement date. If a disabled employee continues to be totally disabled until age 65, his life insurance protection will decrease. After age 65 the disabled employee will be insured for the following proportions of the pre-disability amount of protection:

Attained Age	% of Pre-Disability Insurance Protection
65 to 69	25%
70 and over	$1,000 (fixed amount)

A disabled employee may elect not to make contributions to the Insurance Plan after age 65. If this option is chosen the amount of life insurance protection is reduced to $1,000.

The amount of accidental death and dismemberment (A.D.& D.) insurance protection provided to each employee is equal to the amount of life insurance protection which is provided. Accidental death and dismemberment insurance protection is not provided to retired employees.

Contributions are made to the Insurance Plan at a rate of 20.23¢ bi-weekly (44¢ monthly) per $1,000 of life insurance protection provided to employees. This rate of contribution provides all of the benefits promised including accidental death and dismemberment insurance. No contributions are made for disabled employees who are under age 65. Disabled employees over age 65 are considered to be retired employees.

Retired employees insured under the Insurance Plan contribute at rates which vary by age, as follows:

Age	Monthly Contribution per $1,000 of Insurance Protection
Less than 65	44¢
65 to 69	88

No contributions are required from retired employees who elect the option of $1,000 insurance protection after retirement. Retired employees over age 70 make no contribution for the $1,000 insurance protection.

The contributions for employees' insurance protection are shared between the employees and their employers or are totally paid for by their employers. Up to two-thirds of the contributions are paid by employees. At least one-third of the contributions is paid by participating municipalities.

Participating municipalities do not make any contributions for retired employees life insurance protection.

All contributions are remitted to the Insurance Fund.

(b) Financial Arrangements with Prudential

The financial arrangements between the Board and Prudential consist of:

(i) the premium rates which are to be paid for each type of insurance,

(ii) the charges made by Prudential for the services it provides,

(iii) the method to be used to determine experience refunds or deficits, and

(iv) the effect which termination of the Policy has on the amounts paid and received.

The contribution rates paid to the Insurance Fund and the premium rates paid to Prudential Assurance effective April 1st, 1986 per $1,000 of insurance are as follows:

	Contribution Rate Paid to Insurance Fund		Premium Rate Paid to Prudential	
Insurance	Bi-weekly	Monthly	Bi-weekly	Monthly
Employee				
- Life	20.23¢	44.00¢	12.87¢	28.00¢
- A.D.&D.	(includes A.D.& D.)		1.75	3.80
Retired Employees				
Life (no A.D.& D.)				
- under age 65	N/A	44.00¢	N/A	$1.70
- age 65 to age 70	N/A	88.00	N/A	1.70
- age 70 and older	N/A	N/A	N/A	N/A

The premium rates for life insurance protection are calculated annually. These premium rates remain in effect for the period from April 1st to March 31st of the following year.

The Policy requires Prudential to tabulate the amounts credited to and charged against the Policy as a result of the life insurance part of the protection. This tabulation is made for each policy year.

The amounts credited to the Policy consist of the following amounts:

(i) premiums paid to Prudential for life insurance protection during the policy year,

(ii) interest credited on net cash flow if the cash flow is positive,

(iii) interest credited to the surplus held by Prudential on behalf of the Board, if any, and

(iv) any claims not charged by Prudential as a result of the stop-loss provision of the Policy.

The amounts charged against the Policy by Prudential during each policy year consist of the following charges:

(i) death claims incurred,

(ii) retention charges incurred:

(A) premium taxes,
(B) policy administration,
(C) claims administration,
(D) conversion charges,
(E) stop-loss and risk charges, and

(iii) interest charged on net cash flow, if the cash flow is negative.

The claims incurred under this Policy include the payments made on the death of employees, retired employees or disabled employees. Payments made as a result of accidental death or dismemberment are excluded.

The actual amount of taxes assessed by the Province on insurance premiums is tabulated and charged.

The policy administration fee is equal to $1,400 for 1987.

The charges made for claims administration are $125 per claim for 1987.

In addition, charges for general administration and profit are made in accordance with the following scale:

Annual Premium	Percentage
First $250,000	3.25%
Next 250,000	1.50
Next 250,000	1.25

The premium expected to be paid in 1986 is about $285,000. As a result the charge is equivalent to 3.0% of premiums.

Charges for risk and stop-loss are made in accordance with the following scale:

Annual Premium	Percentage
First $250,000	.75%
Next 250,000	.50
Next 250,000	.25

This stop-loss charge ensures that any deficit in excess of the annual premium is not charged to the Policy.

Conversion charges are assessed if an employee elects to retain his life insurance when it reduces on retirement or on termination of employment.

The surplus (deficit) for the policy year is equal to the difference between the premiums paid and charges incurred for the life insurance protection provided during the year.

Any surplus (deficit) produced during the year is credited (charged) to the Claims Fluctuation Reserve held by Prudential. The Claims Fluctuation Reserve belongs to the Board. The balance of the Claims Fluctuation Reserve is credited (or charged) with interest. The rate of interest credited to this Reserve is the rate "applicable to short-term commercial paper". An experience refund is paid, if surplus plus the Claims Fluctuation Reserve exceeds 50% of the premiums paid (excluding A.D.& D.) during the policy year just completed. The amount of the experience refund is equal to the excess.

The portion of any deficit, which will cause the Claims Fluctuation Reserve to exceed 100% of premiums paid during the policy year just completed, is written off by Prudential.

The premiums for insurance protection are paid out of the Fund.

The amounts remitted to Prudential are based, in part, on the claims experience. These amounts may also change when there is a significant change in the distribution of insurance by age and sex. For example, the amount remitted in respect to retired employees increases as the average age of retired employees increases.

If this Policy is terminated, the surplus or deficit is calculated as if the Policy was still in effect. If, on the final settlement date, there is a surplus after taking into account any surplus or deficits carried forward from prior years, Prudential will pay the amount of the surplus as a final settlement. If there is a deficit, Prudential is responsible for that deficit.

No experience rating type of tabulation is made for the accidental death and dismemberment part of the protection.

The experience under the accidental death and dismemberment part of the Policy is fully pooled. There is no experience rating for this benefit. This is done because actual experience is not reliable where only a few claims are expected each year. The surplus or deficit under the Policy is determined after first excluding the amounts credited to or charged against the Policy in respect of the accidental death and dismemberment insurance protection.

In summary, the financial arrangement with Prudential for the life insurance part of the Policy has the following features:

(i) A surplus (deficit) each year is determined by deducting the amounts charged against the Policy from the premiums paid during the year.

(ii) A surplus is credited to the Claims Fluctuation Reserve. A deficit is charged to the Claims Fluctuation Reserve.

(iii) Interest is credited (charged) on the balance held in the Claims Fluctuation Reserve from the end of the policy year to the end of the following policy year.

(iv) Amounts are paid to the policyholder when the Claims Fluctuation Reserve exceeds 50% of premiums. Interest is added to any amounts paid to the policyholder from the end of the policy year to the date the surplus is paid by Prudential.

(v) Amounts are written off by Prudential when the deficit held in the Claims Fluctuation Reserve exceeds 100% of premiums.

(vi) Any surplus which emerges after the Policy terminates is refunded to the policyholder; any deficit is the responsibility of Prudential.

Summary of Financial Results

	1985		1984		1983	
1. Premiums: Employees	$240,512		$233,834		$208,494	
Retired employees	22,445		17,081		13,312	
A.D.& D.	30,709		33,656		31,446	
	$293,666		$284,571		$253,252	
LESS: A.D.& D.*	(30,709)	$262,957	(33,656)	$250,915	(31,446)	$221,806
2. Death Claims Incurred: Employees	$(86,000)		$(132,000)		$(122,620)	
Retired Employees	(22,750)	(108,750)	(6,500)	(138,500)	(4,550)	(127,170)
3. Retention Charges Incurred:						
Premium Taxes	$ (5,259)		$ (5,018)		$ (4,436)	
Policy Administration	(6,874)		(6,573)		(2,518)	
Claims Administration	(1,500)		(1,350)		(525)	
Conversion Charges	0		0		0	
Stop-Loss & Risk Charges	(2,630)	(16,263)	(2,509)	(15,450)	(1,109)	(8,588)
4. Surplus for the Policy Year		$137,944		$ 96,965		$ 86,048
5. Transfer from Claims Fluctuation Reserve to Surplus		3,802		(85,914)		(86,048)
6. Refundable Surplus on Dec. 31		$141,746		$ 11,051		$ 0
7. Premium Tax Credit on Refundable Surplus		2,893		226		0
8. Experience Refund Due on Dec. 31		$144,639		$ 11,277		$ 0

*A.D.& D. premiums are fully pooled and therefore have been deducted in determining the surplus (deficit).

Summary of Claim Fluctuation Reserve Results

	1985	1984	1983
1. Opening balance	$125,458	$ 36,169	$(46,291)
2. Interest earned (charged)**	9,823	3,375	(3,588)
3. Transfer from Surplus	(3,802)	85,914	86,048
4. Closing balance	$131,479	$125,458	$ 36,169

**Interest earned (charged) on surplus (deficit) as follows:

1983	7.75%
1984	9.33
1985	7.83

5. Actuarial Assumptions

This valuation is based on a set of assumptions as to those factors which will affect the Insurance Plan financially in future years. The factors which are of financial significance to the Insurance Plan are:

(a) the rate of return which will be earned on the assets of the Insurance Fund,

(b) the rates at which salaries increase, and consequently, the amounts of life insurance protection will increase,

(c) the incidence of death while insured,

(d) the incidence of termination of employment,

(e) the incidence of disability,

(f) the value of benefits expected to be paid to an employee who becomes disabled,

(g) the incidence of retirement prior to age 70,

(h) the proportion of retired members who elect to continue to contribute for group life insurance protection after retirement,

(i) the proportion of terminating members who elect to convert to individual life insurance and the charges for converting to this insurance,

(j) the expense of administering the Insurance Plan, including the charges made by Prudential for the services it provides, and

(k) the incidence of accidental death and dismemberment while insured.

Assumptions are developed in respect of each of these factors in order to determine:

(i) the amounts of the contributions expected to be received and the premiums expected to be paid,

(ii) the present value of these expected contributions and premiums for the purposes of establishing the present financial position of the Insurance Fund.

A complete study of experience was made for the 1986 Pension Report. Where applicable, the results of the study of the actual experience of the Pension Plan have been used for this Report.

Each other assumption has been developed from the assumptions used in our 1983 Report.

Any differences between the actual experience and expectations based on the existing assumptions, have been analyzed. Where appropriate, the assumptions used previously have been modified to reflect the results of this study of the experience.

The assumed rate of return and the expected general increases in salaries are based on experience during the 20-year period prior to the valuation date.

The number of deaths, terminations, disablements, and retirements which actually occurred during these periods were compared to the number expected to occur. The numbers expected to occur were calculated by using the rates of utilization assumed in the 1983 Report.

A description of the studies made and the assumptions adopted follows.

(a) <u>Rate of Return on the Assets of the Insurance Fund</u>

At January 1st, 1986, the assets of the Insurance Fund consisted of cash, term deposits, funds held by Prudential plus any accounts receivable less any accounts payable.

The rates of return earned on the assets of the Insurance Fund each year during the last 6 years are shown in the following table:

Year	Rate of Return
1980	19.00%
1981	28.93
1982	21.88
Average	23.27%
1983	11.49
1984	12.80
1985	9.18
Average	11.16%

These rates of return were calculated using the book value of the amounts credited to the Insurance Fund and the investment income earned during each year. This income includes the interest credited to funds on deposit at Prudential.

The Insurance Fund may invest in any security that is an eligible investment for the Pension Plan. It is to be expected that a large portion of the Insurance Fund will, in future, be invested in bonds with a variety of terms to maturity. The balance of the Insurance Fund will likely continue to be invested in short-term notes and equivalent types of investments.

An actuarial valuation relates to events which are expected to happen in the future. As a result, the rates of return obtained in past years are important only to the extent that they constitute a good indication of the rates of return which can be expected to be earned in the future. The rate of return assumed in an actuarial valuation should represent a reasonable balance between current rates of return and the level of investment earnings expected to be realized in the future.

An indication of the rates of return likely to be available in future years can be obtained from a study of the rates which have been available over a period in the past. It is important that the period studied be long enough to include a variety of economic conditions. This is achieved by using a 20-year period. In this Report, we have used the 20-year period ending January 1st, 1986.

A period as long as 20 years allows the effect of a variety of economic conditions to be reflected in the result obtained. It reduces the fluctuations and distortions which can occur, over shorter periods of time, due to business conditions and government controls.

If each month, for 20 years, equal amounts had been invested in federal bonds, the average rate of return would have been 9.59% per year. This calculation was made by using yields obtained from the McLeod Young Weir Long-Term Canada Index.

It is desirable to make allowance for the possibility that the rates of return which are available in the future may be less than the rates of return which were available during the latest 20-year period.

This allowance could be made by excluding from the calculation the very high rates of return that were available during 1981 and the first 6 months of 1982. If this is done, the 20-year average rate of return becomes 9.13% per year.

The rate assumed is also affected by the following consideration. The assumed rate should take into account the effect which a decrease in the rate of inflation will have on the rates of return obtained in future. Due to the important financial consequences of any need to decrease the assumed rate, the rate chosen should continue to be satisfactory in periods when lower rates of inflation are being experienced.

The following table summarizes the adjustments made in determining the assumed rate of return:

Calculation based on 20-year average for federal bonds	9.59%
Effect of removing 1981 and first 6 months of 1982 from 20-year averages	(.46)
Allowance for lower rates of inflation	(.63)
Assumed rate of return	8.50%

A proportion of the assumed rate of return is attributable to the expectation that inflation will exist in the future. Inflation causes a decrease in purchasing power. Knowledgeable investors have sought to offset this decrease by charging rates of interest which, on average, make allowance for the expected rate of inflation during the term of the investment. This allowance is added to the real rate of return desired by the investor to produce the rate of interest charged on that investment.

This decrease in purchasing power can be measured by determining the average annual rate of increase in the Consumer Price Index. During the 20 years ending December 31st, 1985, the Consumer Price Index increased by an average of 6.84% per year.

This increase is also affected by the elimination of the increases in the Consumer Price Index during 1981 and the first 6 months of 1982 from the period covered by the average. If that is done, the increase in the Consumer Price Index over the period is 6.41% per year.

The anticipated rate of return makes allowance for the possibility that the rate of inflation will be lower in the future than it has been in the past. Some allowance has been made for this lower rate by using a rate of inflation which is a little lower than the rate that would be justified by using the relevant part of the 20-year period. The allowance for inflation was reduced in proportion to the reduction made to the assumed rate of return. This caused a reduction of .44 of 1% in the assumed rate of inflation. As a result, the assumed rate of inflation is 6.00% per year.

If the inflationary component in the assumed rate of return of 8.50% is 6.00% the real rate of return is expected to be 2.50% per year.

There are 2 reasons for identifying the 2 parts of the assumed rate of return. These are:

(i) The assumed rate of return is based on an assumption as to future economic conditions. So also is the assumption made as to the rate at which general increases in salary will occur in future. In order to ensure consistency, the same allowance for inflation, i.e. 6.00% per year, is used in developing both actuarial assumptions.

(ii) By identifying the real rate of return, a good indication can be obtained of the significance of the rate assumed in other than average economic conditions. The assumptions of a real rate of return of 2.50% per year implies that new investments obtained for the Fund are anticipated to yield a rate of return of 2.50% per year in excess of the average rate of inflation during the period these investments are held.

(b) <u>Rates of Salary Increase</u>

Salary increases occur as a result of:

(i) general increases. These increases in salary are granted to all employees and reflect changes in economic conditions, and

(ii) service, merit and promotional increases. These increases in salary are granted on an individual basis to recognize an employee's service and increased value to the municipality.

Each class of increase is considered separately in developing the rates at which salaries can be expected to increase in the future:

(i) General Increases in Salary Levels

The 2 components of general increases in salaries are:

(A) the inflationary component. Employees seek increases in salary in order to offset any decreases in the purchasing power which is caused by inflation, and

(B) the productivity component or increase in the standard of living component. The productivity component consists of that portion of general increases in salaries which are not offset by inflation. These increases are due to factors such as increases in the real value of goods and services produced per employed person. An increase in productivity is made possible by the greater use of automated or other equipment. Other increases can occur as a result of increases in qualifications needed to fulfill a position.

The productivity component is based on a study of increases in the average earnings of employed persons in Canada during the 20-year period prior to the valuation date. The productivity component is obtained by deducting the inflationary component from these increases in earnings. During this period, the productivity component was equal to 1.49% per year.

The rate of increase in the productivity component has decreased in recent years. In the last 6 years, the standard of living increased by an average of .27% per year.

Past increases in the standard of living were greater than increases in productivity during the same period. It is likely that at least part of this difference will need to be absorbed before normal increases occur. This will cause increases to be lower in the future than they have been over long periods in the past.

On the basis of these considerations, an allowance of 1.00% per year was made for the productivity component of general salary increases. This is the allowance which was made in our 1983 Report.

The expected general increase in salary is obtained by adding together the increases expected to occur in each component. On that basis, general increases in salary are expected to occur at a rate equal to 7.00% per year in future. This rate consists of an average anticipated productivity increase of 1.00% per year plus an allowance for future inflation at a rate of 6.00% per year.

(ii) Service, Merit and Promotional Increases

A study was made of increases in basic salary due to service, merit and promotion for the purposes of the 1986 Pension Report.

The rates of increase in basic salary due to service, merit, or promotion adopted for this Report are the same as those adopted for the 1986 Pension Report.

(c) Incidence of Death While Insured

(i) Death in Service

A study was made of death claims amongst covered employees. The results of this study are shown in the following table:

	1983 - 1985			1977 - 1985		
	Actual	Expected	Ratio	Actual	Expected	Ratio
Males	8	16	50%	29	43	67%
Females	0	2	0	2	5	40
Total	8	18	44%	31	48	65%

The actual number of deaths was less than the number expected during both the 3-year period and 9-year period prior to the valuation date.

In the 1983 Report, the rates of mortality for males and females were reduced.

For this Report, a further reduction in the rates of mortality was made. This reduction reduced by 25% the difference between the actual number of deaths and the number expected to occur during the 9-year period prior to the valuation date.

On the basis of these new rates of mortality, 38 deaths were expected to occur amongst males and 4 deaths were expected to occur amongst females during the 9-year period prior to the valuation date.

(ii) Death After Retirement

A study was made of mortality rates after pension commences. This study differentiated between:

(A) employees who retired in at least average health, and

(B) employees who retired due to total disability.

This separation is necessary as there is a significant difference in the mortality rates of these 2 groups of former employees.

The experience of these 2 groups is described below:

(A) Employees who retired in at least average health.

A study was made of the rates of mortality of this group of pensioners for the purposes of the 1986 Pension Report. The rates of mortality adopted for this Report are the same as those adopted for the 1986 Pension Report.

(B) Employees who were disabled at the date the pension commenced.

For this group of pensioners, the starting point in choosing the rates of mortality was actual experience obtained from 12 major life insurance companies. This experience was compiled in a study of mortality rates amongst employees who qualified for waiver of premiums benefits under group life insurance. This study was compiled over the period 1960 to 1969 and the results of the study are contained in the 1970 Group Life Premium - Waiver Valuation Table (1970 Group Life Study).

The rates of mortality are affected by the definition of disability used to determine if an employee is disabled. The standard definition of disability is more onerous than the definition under the Insurance Plan. A more onerous definition causes the rates of mortality to be higher amongst employees who qualify for waiver of contributions under the typical group life insurance plan than they will be amongst employees who qualify for waiver of contributions under the Insurance Plan. As a result, the rates of mortality adopted for employees who are disabled at the date the pension commences are 2/3 of the rates of mortality produced by the 1970 Study.

(d) Incidence of Termination of Employment

A study was made of the rates of termination of employment for the purposes of the 1986 Pension Report. The ultimate rates of termination of employment adopted for this Report are the same as those adopted for the 1986 Pension Report. These rates of termination were based on terminations leading to a cash settlement, retention of a deferred pension or some combination of both.

For the 1983 Report, a scale of select factors was developed which, when applied to the ultimate rates of termination, produced the rates of termination at durations of service of 4 years or less. These select factors were as follows:

Service	Factor Applied to Ultimate Termination Rates
<1	2.00
1	1.60
2	1.40
3	1.25
4	1.10
≥5	1.00

For this Report, these factors were reviewed. As a result of this review, it was decided to continue in use these factors for this Report.

(e) Incidence of Disability

A study was made of those disablements which caused contributions to be waived. The results of this study are shown in the following table:

	1983 - 1985			1977 - 1985		
	Actual	Expected	Ratio	Actual	Expected	Ratio
Males	33	4	825%	45	11	409%
Females	0	<1	0	0	1	0
Total	33	4	825%	45	12	375%

The actual number of disablements amongst male employees was greater than the number expected during both the 3-year period and 9-year period prior to the valuation date. For female employees insufficient experience was available to develop any conclusions.

The rate of disablement amongst males increased significantly during the 3-year period prior to the valuation date. This was anticipated as a result of the establishment of the Disability Part of the Pension Plan.

As a result, it was decided to increase the rates of disability. The increase in the rates of disability was made by adopting the same rates of disability for this Report as those adopted for the 1986 Pension Report.

On the basis of these new rates of disability, 35 disablements were expected to occur amongst males and 12 disablements were expected to occur amongst females during the 9-year period prior to the valuation date.

(f) Value of Disability Benefits

If an employee becomes disabled, he is eligible for a waiver of contributions.

This benefit permits the continuation of an employee's insurance if the employee becomes totally and permanently disabled. The contributions which the employee would otherwise have made are waived up to age 65. After age 65, contributions resume. The amount contributed is the same as the amount contributed by other retired employees.

For the 1983 Report the value at the date of disability of the waiver of contribution benefits was based upon the recovery and mortality rates contained in the 1970 Group Life Premium-Waiver Valuation Table. These rates are based upon the combined experience of 12 major life insurance companies. These rates were used to estimate the likelihood at each duration of disablement, that a disabled person will recover or die while his insurance is in force.

A review of the use of this table was made. The rates of mortality of this table are based on a definition of disability which is more difficult to satisfy than the definition of disability applicable under Group Life Policy No. 59001-L.

As a result, the rates of mortality were reduced by 1/3. No change was made to the rates of recovery.

(g) Incidence of Retirement

The rates of retirement adopted for this Report are the same as the rates adopted for the 1986 Pension Plan Report. These rates reflect only retirements for reasons other than disability.

(h) Proportion of Members Continuing Insurance Protection After Retirement

On retirement, a participant may elect to:

(i) continue to contribute for Group Life Insurance,

(ii) cease making contributions.

A large percentage of participants continue to make contributions. Over the 3-year period prior to the valuation date, 52 of 69 or 75% of the employees who retired elected to continue making contributions.

Those who ceased making contributions are insured for $1,000.

We have assumed that all retiring participants will continue to make contributions for group life insurance.

This assumption makes an allowance for the possibility that, in future, a larger proportion of employees will elect to contribute for group life insurance after retirement.

(i) Conversion Charges

The following procedure was used to evaluate the likelihood that an employee will convert his group life insurance to individual life insurance if his insurance is terminating or being reduced.

Over the 3-year period prior to the valuation date, there were no conversions to individual policies amongst employees under the Insurance Plan whose insurance decreased or terminated.

It has been assumed that the conversion privilege will be chosen by one employee out of every 1,000 employees who have an opportunity to convert their life insurance.

It was anticipated that a special charge would be made for each $1,000 of life insurance converted. The amount of the conversion charge is made in accordance with the schedule actually used by Prudential.

(j) Administrative and Other Charges

(i) Civil Service Superannuation Board Charges and Actuarial Fees

The Municipal Employees Benefits Board entered into an agreement with the Civil Service Superannuation Board to provide administrative services to The Municipal Employees Benefits Board with regard to its Pension Plan and Insurance Plan operations. In accordance with the terms of the agreement, The Municipal Employees Benefits Board reimburses the Civil Service Superannuation Board for the cost of these services. The amount of this cost is shown in total for the Insurance Fund part and the Pension Fund part of the Manitoba Municipal Employee Benefits Fund.

To date, none of these costs have been paid out of the Insurance Fund. This was a logical approach since a very large part of the costs incurred were not affected by the existence of the Insurance Plan. We expect that this practice will change as recognition is given to the ongoing work created by the Insurance Plan.

We have assumed that, in future, 7% of the amounts charged by the Superannuation Board will be paid out of the Insurance Fund. This percentage is based on the relationship of contributions for group insurance to total contributions.

In addition, the Insurance Fund is expected to pay all actuarial fees which are attributable to the Insurance Plan. In the past, these fees have been charged to the Insurance Fund.

It has been anticipated that the share of expenses charged to the Insurance Fund will be equal to $14,700 per year in each of the next 3 years. This is equivalent to 4% of contributions.

(ii) Prudential Charges

The charges assessed by Prudential for the services it provides are the sum of the following amounts effective April 1st, 1987:

(A) Claims and administrative expenses consisting of:

(1) Provincial premium taxes of 2% of the excess of premiums over experience refunds.

(2) A policy fee of $1,400 per year.

(3) A charge of $125 per claim.

(4) A charge for general administration and profit in accordance with the following scale:

Annual Premium	Percentage
First $250,000	3.25%
Next 250,000	1.50
Next 250,000	1.25

(5) Risk and stop-loss charges in accordance with the following scale:

Annual Premium	Percentage
First $250,000	.75%
Next 250,000	.50
Next 250,000 and thereafter	.25

It has been anticipated that these charges will continue to be in effect in future policy years.

(k) Incidence of Accidental Death and Dismemberment While Insured

Over the 9-year period prior to the valuation date, there was one accidental death and dismemberment claim under the Insurance Plan.

The incidence of accidental death or dismemberment amongst eligible employees is based upon a study of the claims experience of 17 large life insurance companies. The experience was obtained on policies providing benefits on accidental death during the period 1951 to 1956.

It has been assumed that the mortality rates contained in this table would be suitable if adequate allowance is made for the possibility of dismemberment and disablement claims. For the purposes of this Report, we have continued in use the same rates as those adopted for the 1983 Report.

6. Summary of Actuarial Assumptions Used in this Report

(a) Annual Rate of Return on the Assets of the Insurance Fund - 8.50% per year.

(b) Annual Rates of Increase in Salaries (including an allowance of 7.00% per year for future general increases in salary levels).

Average Annual Increases in Salaries

Age Group	Males	Females
20 - 25	12.5%	11.0%
25 - 30	10.5	9.9
30 - 35	9.7	9.1
35 - 40	9.2	8.6
40 - 45	8.7	8.4
45 - 50	8.6	8.3
50 - 55	7.9	8.0
55 - 60	7.5	7.7
60 - 65	7.3	7.6
65 - 70	7.3	7.3

(c) Incidence of Death While Insured

(i) Annual Rates of Death in Service (for selected ages):

Attained Age	Males	Females
20	.0010	.0006
25	.0007	.0004
30	.0006	.0003
35	.0009	.0004
40	.0016	.0007
45	.0026	.0012
50	.0043	.0018
55	.0070	.0030
60	.0120	.0051
65	.0198	.0077
69	.0240	.0100

(ii) Annual Rates of Death After Retirement (for selected ages):

Attained Age	Non-Disabled		Disabled (ultimate rates)	
	Males	Females	Males	Females
40	N/A	N/A	.0153	.0153
50	N/A	N/A	.0247	.0247
60	.0092	.0042	.0347	.0347
70	.0275	.0124	.0607	.0607
80	.0741	.0429	.1013	.1013
90	.1663	.1118	.1800	.1800
100	.3192	.2952	1.0000	1.0000

(d) Termination of employment

(i) Annual rates of termination applicable to members with 5 or more years of service (for selected ages):

Attained Age	Males	Females
20	.109	.226
25	.081	.203
30	.057	.143
35	.042	.083
40	.028	.047
45	.020	.036
50	.011	.024
54	.007	.014

(ii) The rates of termination applicable to members with less than 5 years of service were obtained by multiplying the above rates by the appropriate factor from the following table:

Service	Factor Applied to Ultimate Termination Rates
<1	2.00
1	1.60
2	1.40
3	1.25
4	1.10
≥5	1.00

(e) Annual Rates of Disability (for selected ages):

Attained Age	Males	Females
37	.001	.002
42	.002	.003
47	.003	.004
52	.005	.007
57	.009	.014
62	.017	.031

(f) Value of Waiver of Contribution Benefit:

Attained Age	Value of waiver of contribution benefit at approval of disability (per $1,000 of insurance)
37	$204
42	240
47	274
52	287
57	267
62	138

(g) Annual Rates of Retirement (for selected ages):

Attained Age	Males	Females
55	.009	.008
56	.008	.025
57	.010	.009
58	.014	.028
59	.016	.025
60	.041	.074
61	.050	.092
62	.067	.124
63	.094	.143
64	.119	.161
65	.632	.584
66	.370	.233
67	.376	.600
68	.175	.500
69	.300	1.000
70	1.000	1.000

(h) Proportion of Retirements where Post-retirement Insurance Protection is expected to be elected.

All retiring employees are assumed to elect the full amount of life insurance protection available.

(i) Proportion of Terminating Members Converting to Individual Insurance and the Conversion Charges:

It has been assumed that out of each 1,000 terminations, one person will elect to convert his/her group life insurance to individual life insurance and that Prudential will levy a conversion charge in accordance with the following schedule:

Attained Age	Conversion Charge per $1,000 of Life Insurance
< 25	$ 25
25 - 29	30
30 - 34	40
35 - 39	55
40 - 44	70
45 - 49	100
50 - 54	135
55 - 59	155
60	170
61	180
62	185
63	190
64	200
65	205
66	215
67	220
68	230
69	235
70	245

(j) Administrative and Other Charges:

(i) Civil Service Superannuation Board Changes and Actuarial Fees

Charges equal to $14,700 per year for each of the next 3 years.

(ii) Prudential Charges

(A) charges equal to the sum of:

(1) 2% of premium less refund for premium taxes,

(2) $1,400 policy fee,

(3) $125 per death claim,

(4) charges for general administration and profit in accordance with the following scale:

Annual Premium	Percentage
First $250,000	3.25%
Next 250,000	1.50
Next 250,000	1.25

(5) charges for risk and stop loss in accordance with the following scale:

Annual Premium	Percentage
First $250,000	.75%
Next 250,000	.50
Next 250,000 and thereafter	.25

(k) Annual Rates of Accidental Death and Dismemberment (for selected ages):

Attained Age	Rates
20	.000639
30	.000327
40	.000328
50	.000398
60	.000533
65	.000691
69	.000857

7. Valuation Results - Present Members of the Insurance Plan

The Insurance Fund receives contributions from and on behalf of participating members and in turn remits premiums to Prudential in respect of the insurance provided. The rates of contribution paid to the Insurance Fund for the Insurance Plan are different from the premium rates paid to Prudential.

The premiums remitted to Prudential under the Insurance Plan have been calculated to reflect the cost of:

(a) basic life insurance protection for employees and retired employees including the $1,000 paid-up life insurance available,

(b) accidental death and dismemberment protection for employees, and

(c) the waiver of contributions when an employee becomes disabled.

The Insurance Fund is required to pay:

(a) the agreed upon premiums, and

(b) a share of the expenses incurred by the Municipal Employees Benefits Board in the operation of the Insurance Fund.

The financial position of the Insurance Fund is indicated by the relationship between:

(i) the present value of the premiums expected to be paid to Prudential in respect of the benefits promised and the expenses expected to be incurred, and

(ii) the present value of the funds available to finance these premiums as they become due.

The actuarial valuation is the process whereby this relationship is quantified.

The present value of the premiums in respect of a benefit is determined separately for each benefit which the Insurance Fund provides. For each benefit, each employee, and each future year of service in the Insurance Plan, we determine:

(i) the probability of a benefit becoming payable at each future age based on the actuarial assumptions outlined in the previous Section of this Report,

(ii) a discount factor which makes allowance for the portion of the benefit which is expected will be financed by future investment earnings, and

(iii) the amount of the expected benefit. The expected benefit is calculated using the salary expected to be received prior to the occurrence of this event.

The present value of the premiums for each benefit for each employee is the sum of the product of these 3 components over all possible future years of service for that employee. The present value of the premiums for each benefit is the sum of the present values obtained for all employees.

The present value of the premiums in respect of pensioners and former employees on waiver of contributions is determined by a similar process.

The principal sources of funds available to finance the premiums are:

(i) the present assets of the Insurance Fund, and

(ii) the contributions expected to be made to the Insurance Fund by the employees and the employers.

The present value of the contributions which are expected to be received in the future from employees already participating in the Insurance Fund are valued in a similar way. For each employee the expected contributions for each year in the future are multiplied by the probability, based on the actuarial assumptions, that the employee will still be participating in the Insurance Plan at that age in the future and by a discount factor. The present value of future contributions for each employee is the sum of the present values obtained over all possible future years of service for that employee. The present value of future contributions is the sum of the present values obtained for all employees.

The Valuation Balance Sheet reflects the financial position of the Insurance Fund with respect to the present participants. While new contributors will affect the financial position, their number and distribution by age, sex and amount of insurance is much less easy to predict than the other factors taken into account in the valuation.

The following Balance Sheet anticipates that the relationship between the contributions, paid by employees or other persons participating in the Insurance Fund and on their behalf by participating employers, and the premiums paid to Prudential will remain the same as it existed at the time this Report was prepared.

The present value of future contributions and the present value of future premiums are shown separately only if the value of future premiums exceeds the value of future contributions. Otherwise only the excess of the present value of future contributions over the present value of future premiums is shown.

Insurance Fund of the
Group Insurance Plan for Employees of
Participating Municipalities in Manitoba
Valuation Balance Sheet
at January 1st, 1986

ASSETS	
Cash in Bank	$ 8,312
Term Deposits	150,000
Accrued Bank Interest	2,291
Contributions Receivable	26,251
Funds on deposit with Prudential (Note 1)	276,118
Value of future Contributions	
- in excess of the contributions required to provide life insurance	679,600
Value of future contributions after retirement	
- present retirees (healthy)	21,000
- present retirees (disabled)	1,200
- future retirees (healthy)	405,700
- future retirees (disabled)	30,100
TOTAL ASSETS	$1,600,572
LIABILITIES	
Accounts Payable	29,323
Value of future insurance benefits provided after retirement	
- present retirees (healthy)	89,100
- present retirees (disabled)	24,800
- future retirees (healthy)	792,000
- future retirees (disabled)	201,500
Value of future insurance benefits for present disabled employees	347,000
Value of waiver of future contributions for future disabled employees	1,164,700
Value of future administration expenses during next 3 years	39,100
TOTAL LIABILITIES	$2,687,523
DEFICIT	$1,086,951

Notes:

1. The funds on deposit with Prudential consist of:

Claims Fluctuation Reserve at January 1st, 1986	$131,479
1985 Experience Refund	144,639
Total	$276,118

8. Analysis of Valuation Results

This is the third valuation of the Insurance Fund. The last valuation of the Insurance Fund indicated that there was a deficit (unfunded liability) of $623,552 at January 1st, 1983. This valuation indicates there is an unfunded liability of $1,086,951 at January 1st, 1986.

The financial position at January 1st, 1986 can be reproduced if the unfunded liability at January 1st, 1983 is adjusted to recognize the various changes to the financial position which occurred in the last 3 years. This procedure is demonstrated in the following schedule:

Unfunded Liability at January 1st, 1983	$ 623,552
Interest on unfunded liability at 9.00% per year	184,000
Expected unfunded liability at January 1st, 1986 before effect of actual experience and changes in assumptions	$ 807,552
Effect of actual experience	279,799
Unfunded liability at January 1st, 1986 before effect of changes in assumptions	$1,087,351
Effect of changes in assumptions	(400)
Unfunded liability at January 1st, 1986	$1,086,951

The following factors influenced the actual experience during the period under review and had an adverse effect on the financial results:

(a) The number of disablements was greater than the number expected. The adverse effect on the financial position due to this source was equal to $428,300.

(b) The number of retirements was greater than the number expected. The adverse effect on the financial position due to this source was equal to $16,100.

The following factors influenced the actual experience during the period under review and improved the financial results:

(a) The number of deaths was less than the number expected. As a result, experience refunds were earned during the valuation period as follows:

Policy Year	Experience Refund
1983	-
1984	$ 11,277
1985	144,639
Total	$155,916

In addition to the experience refunds earned during the valuation period Prudential allocated amounts to the Claims Fluctuation Reserve. The Board owns this asset. The value of this reserve at January 1st, 1983 and January 1st, 1986 was equal to $(46,291) and $131,479 respectively.

(b) The actual proceeds from investments were greater than the amounts assumed by an amount equal to $6,400.

The principal reason for the deficit is the initial unfunded liability created when the Insurance Plan commenced.

For employees who became participants of the Insurance Plan at the date the Insurance Plan commenced, an initial unfunded liability was created since contributions will be made on behalf of these participants only for a portion of their working lifetime. As the Insurance Fund grows, the importance of this initial unfunded liability is decreasing. The deficit at January 1st, 1980 and January 1st, 1983 was equal to 58% and 42% of the total liabilities respectively on those dates. The deficit at January 1st, 1986 was equal to 40% of the total liabilities on that date.

This Report assumes that all participants who remain in the Insurance Plan until retirement will elect the maximum of post-retirement life insurance protection for which they are eligible. Retired employees may elect to reduce the amount of their insurance to $1,000 and pay no further contributions. Approximately 1/3 of the retired employees have elected to reduce their protection to $1,000. If 1/3 of employees who retire in the future can be expected to elect the $1,000 post-retirement insurance protection, the financial position of the Insurance Fund is improved by $185,900.

The contribution rate for employees was initially set at a level of 48.0¢ per month per $1,000 of insurance protection. To make the Insurance Plan attractive to other potential participating employers, the contribution rate was decreased by 4.0¢ to 44.0¢ per month

per $1,000 of insurance effective January 1st, 1979. This reduction in the contribution rate has enabled the membership of the Insurance Plan to increase. Membership in the Insurance Plan increased from 804 employees at January 1st, 1980 to 1,430 employees at January 1st, 1986. This strengthens the Insurance Plan by spreading the cost over a larger number of participants and reducing the relative importance of fluctuations in the amount of claims in future years. The initial effect of the reduction in the contribution rate increased the deficit. The beneficial effects of this change will become apparent in future valuations of the Insurance Plan.

Fluctuations in the amount of claims have occurred in the past, and can be expected in the future. The following table shows the premiums and death claims for 1983, 1984, and 1985:

	1983	1984	1985
Premiums:			
Employees	$208,494	$233,834	$240,512
Retired employees	13,312	17,081	22,445
	$221,806	$250,915	$262,957
Death Claims:			
Employees	$122,620	$132,000	$ 86,000
Retired employees	4,550	6,500	22,750
	$127,170	$138,500	$108,750
Difference	$ 94,636	$112,415	$154,207

As indicated, experience refunds equal to $11,277 and $144,639 were earned in respect of the 1984 and 1985 policy years respectively.

The assumptions used in this Report differ from the assumptions used in the 1983 Report. The change in assumptions had a minor effect on the financial position.

9. Premium Rates

The break-even premium rates which are needed in order to provide the insurance protection promised under the Insurance Plan and the agreed upon charges for services and other costs have been determined on the basis of the assumptions described in Section 6 of this Report and the distribution of insurance by age and sex at January 1st, 1986.

The break-even premium rates and the premium rates per $1,000 of insurance paid to Prudential are shown in the following table:

	Break-Even Premium Rate		Premium Rate Paid to Prudential	
Insurance	Bi-weekly	Monthly	Bi-weekly	Monthly
Employees				
- basic coverage	15.63¢	33.99¢	12.87¢	28.00¢
- A.D.& D.	1.62	3.53	1.75	3.80
Retired Employees (basic coverage/no A.D.& D.)				
- under age 65	N/A	$1.75	N/A	$1.70
- age 65 to 70	N/A	1.75	N/A	1.70
- age 70 and older	N/A	N/A	N/A	N/A

The premium rate currently being charged for employees basic life insurance and accidental death and dismemberment insurance protection combined is lower than the combined break-even premium rates that have been calculated on the basis of the assumptions used in this Report.

The break-even premium rates calculated for this Report are 6.6% lower for employees basic coverage and 7.9% for retired employees basic coverage compared to the corresponding break-even premiums calculated for the 1983 Report.

The premium rate currently being charged for retired employees life insurance protection is based on Prudential's standard mortality rates. The experience expected using these rates of mortality is more favourable than the experience expected using the rates of mortality assumed in this Report.

10. Recommendations

(a) The existence of a deficit in the Insurance Fund should not be a cause for concern at this time. The significance of the deficit is decreasing. The deficit has reduced to 40% of the liabilities at January 1st, 1986.

(b) There has been a reduction in the break-even premium rates for basic coverage for employees and retired employees equal to 6.6% and 7.9% respectively.

(c) There has been an improvement in the experience rating results during the valuation period. Experience refunds have been paid by Prudential in respect of the 1984 and 1985 policy years.

This improvement was expected. There is a continuing increase in the proportion of eligible employees who are participating in the Insurance Plan. This increase is the result of the automatic participation of all new employees who fulfill the eligibility requirements.

There is also much less opportunity for employees and employers to select against the Insurance Plan, than there was at the time decisions were being made whether or not to participate in the Insurance Plan.

(d) Fluctuations in the amount of claims paid from year to year can cause the experience to be unfavourable in one period and favourable in the next.

The existence of a deficit increases the importance of favourable claims experience in the future to keep the contribution rates at their current level.

(e) Rates of investment income since January 1st, 1986 have been higher than the rate assumed in this Report. If this trend continues, the financial position of the Insurance Fund will show a further improvement in the next valuation.

(f) The financial position of the Insurance Fund and the sufficiency of the contribution rates should be determined at January 1st, 1989.

We will be pleased to discuss this Report with you at your convenience.

DATED at Winnipeg this twenty-seventh day of April, 1987.

Respectfully submitted,

John A. Turnbull

Actuary

Louis E Clement

Actuary